	Application No.	Applicant(s)
Notice of Allowability	09/943,209	LAM ET AL.
	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _6/10/05_.

2. ☒ The allowed claim(s) is/are _1-2, 3-9 (now renumbered 1-8)_.

3. ☒ The drawings filed on _15 November 2004_ are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

    Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1.   This action is responsive to the Applicant's response filed 6/10/2005.

As indicated in Applicant's response, claims 1, 4-5 have been amended, claim 9 added,

and claim 3 canceled. Claims 1-2, 4-9 are pending in the office action.

EXAMINER'S AMENDMENT

2.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Robert Lord, Reg. # 46479 on 8/25/2005.

The application has been amended as in the following.

In **claim 1**, amend **line 1** as follows :

A <u>computer-implemented</u> method of debugging software comprising:

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

3.   Claims 1-2, and 4-9 are allowed.

The following is an examiner's statement of reasons for allowance:

A method for debugging software comprising (i) obtaining a input list test vector, a

software module, and a bug list comprising a minimal set of stimuli to reproduce a software bug

in the software module; generating a output vector by applying the input list test to such software

module; (ii) applying a comparison test to such output vector to determine whether a bug exists

in said module then applying a module decomposition test to said module when the comparison test is positive; (iii) obtaining a module decomposition list having 2 or more submodules of said module and iteratively processing said list whenever said decomposition test is positive, such processing comprising removing at least one submodule; and (iv) appending said software module and said input test vector to the bug list when said module is a minimal module based on the decomposition list determined from the decomposition test; as recited in claims 1 and 9.

The prior art taken separately or jointly does not suggest or teach the following features.

Darty, USPN: 6,173, 440, discloses a fault detection method wherein a fault detection matrix is created from runtime data, such matrix associates a set of code with a set of test points therefor and a corresponding set of pass/fail results; such runtime testing mapping for each test point in a code with expected values so that the failed test points can be regrouped for further rerun. But Darty does not teach or suggest all together the sequence of input and output test vectors as in (i) followed by comparison test as (ii), a decomposition test done iteratively as in (iii) and a bug list as in (iv).

Tokuda, USPN: 6,735,581, discloses a fuzzy system method of automatically generating a multi-variable decomposition technique wherein sample sets are decomposed into clusters each associated with a given set of input variables to generate output based upon applying fuzzy rules; then integrating the results back into the system such that error in each iterative stage to be specified; but fails to disclose or suggest all together the sequence of input and output test vectors as in (i) followed by comparison test as (ii), a decomposition test done iteratively as in (iii) and a bug list as in (iv).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
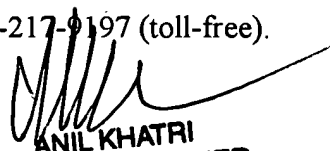
Conclusion

4.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence – please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANIL KHATRI
PRIMARY EXAMINER